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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/554,024	10/16/2000	Georges Freyssinet	33207-PCT-US	6532

21003 7590 05/07/2003

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NEW YORK, NY 10112

EXAMINER

IBRAHIM, MEDINA AHMED

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 05/07/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/554,024

Applicant(s)

FREYSSINET et al

Examiner

Medina Ibrahim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Feb 10, 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-9, 13, 15-22, 24, 25, 27, 28, and 31-36 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9, 13, 15-22, 24, 25, 27, 28, and 31-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Applicants' response filed 02/13/03 in reply to the Office action mailed 07/02/02 and 12/31/02 and amendments C and D have been entered. Claims 5, 10-12, 14, 23, 26 and 29-30 have been cancelled. Claims 31-36 have been added. Therefore, claims 1-4, 6-9, 13, 15-22, 24-25, 27-28 and 31-36 are pending and are under examination.

All rejections and objections not stated below have been withdrawn.

#### ***Claim Rejections - 35 USC § 112, 2nd paragraph***

Claims 1-4, 6-9, 13, 15-22, 24-25, 27-28 and 31-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are indefinite in the recitation of "Xaa" to designate "NH2" or "OH" which are not amino acids. In addition, the recitation of "0-5" amino acids renders the claims indefinite because "0" amino acids does not make sense.

#### ***Claim Rejections - 35 USC § 112, 1st paragraph, enablement***

Claims 1-4, 6-9, 13, 15-22, 24-25, 27-28 remain rejected and new claims 31-36 are rejected under 35 U.S.C. 112, first paragraph, because the specification while

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being enabling for the nucleic acid fragment of SEQ ID NO:1 from *Psodius maculiventis*, encoding thanatin with bactericidal or fungicidal properties when expressed in transformed plants and the sequences of SEQ ID NO: 2 and 4- 5, does not provide enablement for an isolated nucleic sequence encoding the amino acid sequence of claims 1, 13, 16, 19, 28, and 34 having thanatin activity or a complement of the disclosed nucleotide sequences and a method for using said nucleic acid sequence to induce disease resistance in transgenic plants. The rejection is repeated because the specification does not provide guidance for a nucleic acid sequence encoding a modified peptide comprising Xaa being a variable residue of having sequence from 1 to 10 amino acids and still retaining thanatin disease resistance activity in plants. While a modification comprising addition of one or two amino acid sequences in a specific region of a protein and assays of testing protein activity are well within the level of one of skilled in the art, the claimed variant involves numerous modifications comprising additions of 1-10 amino acids at position 1 and 0-5 amino acids at position 13 of SEQ ID NO:14 and in various combinations of the 20 amino acids. While the specification merely states some amino acids may be preferred, the specification does not provide specific guidance as to which of the 20 amino acids and in what order are the 1-10 or 0-5 are selected, so that the thanatin activity is retained. Because a very small change in the amino acid sequence of a protein can result in a very large change in the protein function, it is unpredictable as to whether the modified

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peptide will retain thanatin activity. As stated in the last Office action, Fehlbaum et al (PNAS, vol. 93, pp. 1221-1225, 1996) disclosed that one or few amino acid modifications in thanatin can drastically reduce its activity against bacteria and fungi pathogens (see page 1223, Table 1). Therefore, absent specific guidance, one skilled in the art is left with excessive trial and error experimentations considered undue.

In addition, no transgenic plant having disease resistance as result of expressing exemplified or non-exemplified nucleic acid sequence has been disclosed.

Regarding claims that recite "complement" of the disclosed sequence, the claims read on sequences that are not fully complementary which encompass as few as 2-mer. It is unlikely that a sequence with 2-mer would have any thanatin activity, as stated in the last Office action. An amendment to the claims to replace a "complement" --fully complementary--, would obviate the rejection based on "complement."

### ***Remarks***

No claim is allowed.

Papers relating to this application may be submitted to Technology Sector 1 by facsimile transmission. Papers should be faxed to Crystal Mall 1, Art Unit 1638, using fax number (703) 308-4242. All Technology Sector 1 fax machines are available to receive transmissions 24 hrs/day, 7 days/wk. Please note that the faxing of such papers must conform with the Notice published in the Official Gazette, 1096 OG 30, (November 15, 1989).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina a. Ibrahim whose telephone number is (703) 306-5822. The Examiner can normally be reached Monday -Tuesday from 8:00AM to 4:00PM and Wednesday-Thursday from 9:00AM to 3:00 PM .

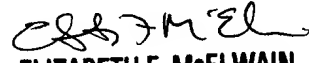
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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amy Nelson, can be reached at (703) 306-3218.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0196.

May 1, 2003

mai

  
**ELIZABETH F. McELWAIN**  
**PRIMARY EXAMINER**  
**GROUP 1600**